Influence of nutraceuticals on satiety

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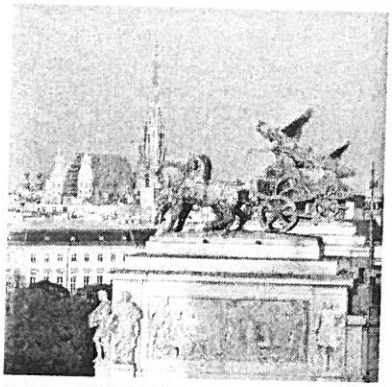

Nutraceuticals and Obesity

Abstracts

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disappointing. Many studies employing antioxidants like vitamin E, vitamin C, β-carotin, selenium had no or only marginal effects on the central characteristics of the metabolic syndrome and did not lead to lasting clinical improvements or reduction in the incidence of SX and its follow-up diseases. On the other hand some studies were successful in demonstrating significant improvements following dietary modifications like the mediterranean diet and high intake of fruit and vegetables which are actually the best natural sources of antioxidants. Today it becomes more and more evident that the utilization of complex antioxidant sources like natural fruit and vegetable, red wine, plant oils and even extracts of fruit and vegetable with highly concentrated antioxidants are effective measures to improve the risks of metabolic syndrome and reduce the incidence of consecutive metabolic diseases. Obviously the complexity of antioxidants with many interacting components is the key to the treatment of metabolic oxidative stress diseases like SX.

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Influence of nutraceuticals on satiety

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Obesity has become a global epidemic, and the efforts to curb the rise in prevalence of overweight and obesity have so far not been very successful. The "energy gap" is the daily surplus in energy balance that can explain the average weight gain at a population level, and it has been estimated to be 50–100 kcal. As many dietary factors or substances exert effects on the three components of energy balance, one way to affect the energy gap is to use the inherited properties of these substances. Because the positive energy balance is created by an excessive energy intake (i.e. obese individuals have a higher energy intake than normal weight individuals) many efforts have been exerted to reduce energy intake by reduced portion sizes, reduced energy density foods etc. Recently, more physiological approaches are trying to reduce spontaneous energy intake by enhancement of satiety through naturally occurring nutrients and bioactive food substances working on e.g. gastric emptying, and hormones as ghrelin, CCK, GLP-1, PYY etc.
Clearly, a high intake of dairy protein is reducing spontaneous food intake, and may be one important mechanism to link low-fat dairy and meat products with better weight control. In the large randomised DIOGENES dietary intervention study at 8 different European centres, both a higher protein content and lower glycemic index improved retention and weight loss maintenance. Now, research are investigating more specific proteins, peptides and amino acids to obtain a better physiological mechanism of action, and to enable the use of this way to promote satiety without increasing total protein intake.
Dietary calcium reduces fat absorption, and a sufficient intake may also prevent excessive hunger during weight loss diets. Caffeine, chili, mustard, catechins have beneficial effects on energy balance, although the quantitative importance of this may be modest. In conclusion, manipulation of diet composition with an aim to prevent weight gain and weight re-gain is a promising avenue of research.

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Significance of formula diets in obesity therapy

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The therapeutic spectrum of obesity management comprises first and foremost a conservative approach to achieve weight reduction. Numerous dietary approaches